



# FROZEN YOGURT PRODUCER TRIMS ENERGY USE

**ENERGY-EFFICIENCY IMPROVEMENTS BRING YOCREAM INTERNATIONAL \$204,461 IN CASH INCENTIVES**

With 110 tasty flavors of frozen desserts and beverages, YoCream International, Inc. is all about production quality. Now the 35-year-old company is applying that same high-quality approach to saving energy in its Portland-area manufacturing plant.

Since 2006, YoCream has meticulously worked to trim its operating costs and improve its environmental impact.

When increased demand for its products required YoCream to install a higher capacity freezer, the company looked to Energy Trust of Oregon to help select the most energy-efficient equipment available. Energy Trust performed a detailed engineering analysis, at no charge, that recommended a 10,600-square-foot freezer with variable frequency drives, VFDs, on compressors, condensers and evaporators. Fast-closing doors keep cold from escaping, and heat recovered from compressors provides underfloor heating. YoCream can conveniently maintain the freezer's temperature from a computer at the office or remotely. A \$105,265 cash incentive from Energy Trust helped defray some of the project cost.

Success with the freezer prompted YoCream to turn to Energy Trust again when expanding its refrigeration system. After conducting a thorough study of the system, Cascade Energy, an Energy Trust Program Delivery Contractor, recommended a new energy-efficient, 300-horsepower compressor with VFD, energy-efficient condenser, VFD-controlled condenser fan and sophisticated computer controls. This project dished up more than 500,000 kilowatt hours and a \$74,673 Energy Trust incentive.

## PROJECT-AT-A-GLANCE

- 115,000-square-foot manufacturing plant and licensed dairy processor
- 100 employees

## Project benefits

- Lower operating and energy costs
- Consistent temperature control
- Opportunity to extend equipment life
- Decreased noise
- Improved lighting levels
- Reduced environmental impacts

## Projects

- New high-efficiency freezer with VFDs
- Compressor heat recovery for underfloor heating
- Refrigeration operations and maintenance improvements, with operator training
- Cooling tower controls upgrade
- Compressed air leak detection and repair, with operator training
- Conversion of metal halide lighting to high-performance T8 fluorescent
- Conversion of T12 fluorescent lighting to high-performance T8 fluorescent
- Lighting occupancy sensors

## Financial analysis

- \$204,461 in cash incentives from Energy Trust
- \$143,837 estimated annual energy cost savings

## Estimated annual savings

- 2,021,857 annual kilowatt hours
- 768 tons of carbon dioxide



“Energy Trust’s involvement helps with our decision making,” said Clayton Eberle, chief engineer, YoCream. “Their reports include recommendations that might not have occurred to us. The cash incentives, together with detailed estimates of project cost, savings and payback, are useful when seeking upper management approval.”

Recognizing that energy efficiency is not only about new equipment, YoCream is committed to fine-tuning the equipment it has. As part of Energy Trust’s operations and maintenance offerings, Cascade Energy monitored YoCream’s compressed air lines to identify leaks that needed attention. “We noticed a difference as soon as we began repairing the leaks,” said Eberle. “Our energy savings went up, and noise levels went down because the compressor wasn’t working as hard.”

A year later, YoCream was back for more—this time to make operations and maintenance improvements on its refrigeration system. Energy Trust calibrated refrigeration sensors and showed YoCream how to adjust the set points to the central refrigeration control system. YoCream also learned that a pump on the cooling tower was running continuously, a problem resolved with new controls. These no- or low-cost activities earned another \$4,800 incentives, for savings of more than 202,801 kilowatt hours.



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“Upkeep on the refrigeration system is now up to us,” said Eberle. “We’ve entered all our set points into a spreadsheet and have a schedule to calibrate the sensors every six months.”

YoCream also upgraded lighting throughout its facility. The company converted its 400-watt metal halide lights to energy-efficient, high-performance T8 fluorescent lighting with electronic ballasts. T12 fluorescent lighting, which is becoming difficult to maintain due to a federal phase out, was replaced with high-performance T8s.

“We’ve made energy efficiency a part of the job at YoCream,” summarized Eberle. “Our personnel are actively involved in monitoring energy use. It’s a lot about documentation. Employees like it because it’s a great chance to walk around with a clipboard and check equipment settings.”